

Community Air Protection Strategy (CAPS)

A Regional Enforcement Initiative

Problem Statement

This Regional Enforcement Initiative and targeting strategy seeks to protect public health by identifying and quickly remediating single source-oriented Clean Air Act regulatory compliance issues in areas where the public is exposed to air pollution levels exceeding the National Ambient Air Quality Standards (NAAQS).

Background

In recent years, EPA has strengthened and revised NAAQS for several pollutants (Pb, O₃, and PM) and established new, shorter-term averaging standards for others (1-hr SO₂ and NO_x). This tightening of NAAQS has increased the importance of evaluating regulatory compliance at sources that are the significant (or sole) contributors to the NAAQS exceedances. Sources previously viewed as contributors to “background” concentrations of air pollution in areas exceeding the NAAQS have now become the primary suspect for pushing an area over into non-attainment of a NAAQS. Indeed, Regions are finding single sources out of compliance with emission limits, which lead to exceedances of NAAQS (monitored, modeled, or designated).

For example, in 2008 EPA lowered the Pb NAAQS standard tenfold from 1.5 µg/m³ to 0.15 µg/m³. Also, in 2010, we created new, shorter-term standards for airborne concentrations of SO₂ and NO_x by establishing a 75 ppb NAAQS threshold on a 1-hr averaging basis. Previously the SO₂ standard was 500 ppb on a 3-hr averaging basis. Currently, there are 21 Pb NAAQS non-attainment areas covering a population of 9.5 million people; 29 1-hr SO₂ NAAQS non-attainment areas covering 1.9 Million people; and, 32 PM₁₀ NAAQS non-attainment areas covering 9.6 million people. Many of these areas also are communities designated in the Administrator’s “Making a Visible Difference in Communities” priority.

One primary public health exposure pathway to lead is inhalation. Once taken into the body, lead distributes throughout the body in the blood and is accumulated in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems and the cardiovascular system. Lead exposure also affects the oxygen carrying capacity of the blood. The lead effects most commonly encountered in current populations are neurological effects in children and cardiovascular effects (e.g., high blood pressure and heart disease) in adults. Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits and lowered IQ.

Current scientific evidence links short-term exposures to SO₂, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing.) Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics. Emissions that lead to high concentrations of SO₂ generally also lead to the formation of other SO_x. Control measures that reduce SO₂ can generally be expected to reduce people’s exposures to all gaseous SO_x. This may have the

important co-benefit of reducing the formation of fine sulfate particles, which pose significant public health threats. SO_x can react with other compounds in the atmosphere to form small particles. These particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admissions and premature death.

Benefits

This strategy will formalize an on-going Regional enforcement targeting effort that gives EPA the ability to quickly remedy single source-caused NAAQS exceedances via an array of enforcement tools. Ultimately, this strategy results in public health protection by focusing enforcement resources on areas with known and unknown monitored, modeled, or designated exceedances of the NAAQS.

Additionally, this strategy brings together the air planning and implementation efforts of OAR with the enforcement tools of OECA. In some instances this effort will ensure that sources are in compliance and emissions are accurate before formal NAAQS designations processes and before a potentially lengthy SIP development process is launched. In other cases, these enforcement efforts may assist during or after the SIP processes to address NAAQS exceedances. CAPS will increase coordination between staff in enforcement, permitting, and SIPs and ensure accurate emissions are utilized for SIPs. Currently there is an assumption that the permitted emissions are accurate, but recent Regional experiences have shown that is not always the case, e.g. a source is not in compliance, and/or some emissions are either unaccounted or inaccurately represented.

Information about air quality, emissions, and compliance status are very important and lead to big decisions about NAAQS attainment and SIPs. If inaccurate, there are significant implications for all of EPA, SIPs, permits, and enforcement. It is important to note, however, that this enforcement strategy does not supplant the SIP process. In fact, CAPS seeks to compliment SIP and permitting efforts and quality assure the SIP development and implementation work based on inaccurate assumptions about compliance or emissions from sources significantly contributing to NAAQS exceedances.

From past experience, Regions can expect the following types of results:

- Emissions reductions, e.g. tighter permit limits
- Air pollution controls, e.g. baghouses
- Accurate accounting of emissions, e.g. stack tests or ambient monitoring
- Identification of unpermitted emissions, e.g. via monitoring studies
- Enforcement settlements, e.g. ACOs, CAFOs, and Judicial Consent Decrees

Process – How? What? When? Options?

The effort will be led by the CAPS Regional Enforcement Committee (CREC), which is a subset of Regional Air Enforcement Managers (AEMs). The CREC has developed initial targeting lists for Regions to use for Pb and 1-hr SO₂. This targeting identifies sources in all ten Regions. However, the lists need to be screened and refined based on local knowledge and experiences about the targeted sources. Additionally, each participating Region may want to add information to the targeting effort by including information about community complaints, other Agency priorities, and/or other special considerations. Finally, it is important that Regions have conversations with States about the target lists and any special considerations States may have, especially in regard to sensitivities about interplay with the SIP process.

This initiative will begin in FY16 and conclude by FY18. Focus may be placed on specific sectors or pollutants in each fiscal year. Also, some sectors may benefit from a corporate-wide approach with a Lead Region addressing all sources that are in violation all under one corporate umbrella.

Furthermore, we expect CAPS will take advantage of all enforcement tools and monitoring methods, including NextGen Air Monitoring. We anticipate that additional stack testing or ambient monitoring ordered by CAA Section 114 authorities will be a significant part of this initiative. One expected benefit from this effort will be addressing known deficiencies with inaccurate, out of date, or inappropriately used AP42 emission factors and/or identification of previously “uncaptured” emission sources by requiring ventilation studies, for example.

Commitments, Measures, Results

Depending on the outcome of the discussions on specific sectors or pollutants, each participating Region will screen and refine the target lists for their respective area in the first quarter of FY16. Then in second quarter FY16, each participating Region will decide on a number of investigations, reviews and/or inspections at the sector/pollutant chosen facilities. For example, for FY16, all participating Regions may commit to (X) facilities to inspect, send 114 information request and/or investigate in the agreed upon sector/pollutant. Such investigations may include inspections and/or the above mentioned 114 testing orders for ambient monitoring or ventilation studies for the pollutant of choice.

In addition, there are opportunities for work sharing if there are Regions that are interested in participating, but don't have resources to do so. In this situation we envision, one Region may take on another Region's target list in coordination/cooperation with those involved. There may be opportunities to establish a corporate-wide approach whereby one Region takes on an industrial sector under the same corporate umbrella (e.g. Region 11 handles all XYZ Battery Company facilities). The CREC anticipates being as involved in investigation development, negotiation, and resolution as Regions need. The CREC has staff available to help Regions with resource constraints.

To assess the effectiveness of this initiative, measures will be defined to allow for tracking of the results of our efforts. Measures could include more than just the number of investigations/inspections, e.g. perhaps number of cases initiated, number of inaccurate SIPs avoided, and/or compliance assistance provided. Initial discussions with OECA seemed positive that if Regions included CAPS priority work in their Regional Strategic Plans that there would be acknowledgement in terms of resource tradeoffs and “credit” towards working on priority areas.

The CREC will monitor results and reevaluate the initiative, in collaboration with participating Regions, Division Directors, OAR, and OECA on a semi-annual basis. Regional Division Directors, OAR/OAQPS, OECA/AED will provide oversight and general direction for the effort and will be consulted during routine Air Division Director and SEMM meetings, as needed.

Subcategory Descriptions

Pb Sector

This sector includes facilities that have actual or potential measured, monitored or modeled exceedances of the 0.15 µg/m³ NAAQS. There are currently 21 non-attainment areas covering a population of 9.5 million people. The potential targets include facilities in battery recycling, lead-acid

battery manufacturing, brass and bronze foundries, ammunition manufacturing, mining and steel mills.

The initial targeting list shows potential targets in all ten Regions and Pb non-attainment areas in seven.

SO₂ Sector

This sector includes facilities that have measured, monitored or modeled exceedances of the 75 ppb 1-hr NAAQS. It currently includes 29 non-attainment areas, covering a population of 1.9 million people. The potential targets include facilities in brick manufacturing, mineral wool production, lime kilns, cement kilns, lightweight aggregate production facilities, sulfuric acid plants, pulp and paper mills, coke ovens, calcining plants, iron and steel mills and foundries.

The initial targeting list shows potential targets in all ten Regions. The initial list focuses on non-EGU sources with emissions greater than 500 tpy. Regions are expected to further refine the target list by filtering with local knowledge, e.g. low stack height sources, located near elevated terrain, and/or under-represented emissions by using inaccurate emission factors.

PM₁₀ Sector

This sector includes facilities that have measured, monitored or modeled exceedances of the 150 µg/m³ NAAQS. It currently includes 32 non-attainment areas covering a population of 9.6 million people. The potential targets include facilities in bulk solid storage terminals and bulk material processing, foundries, steel mills, lime and cement kilns, mines, refineries and zinc and lead producers.

Work is on-going developing initial target lists for Regions.

Other Discussion Points

- Which Regions are interested in participating? Thus far, we have heard from Region 3, 4, 5, 7, and 10.
- Even if you aren't committed to investing resources, are there Regions that are interested in a work-sharing approach for this effort?

Next Steps for CAPS

- Next week Region 7 will issue a transmittal memo to interested Regional Enforcement Division Directors and cc: Air Division Directors. Memo will contain the initial target lists and request response indicating participation in the effort.
- Regions notify R7, if they would like to participate by Nov. 30th.
- First quarter FY16, CREC complete work on initial target list for PM₁₀. Regional participants coordinate internally (AEM & APM), screen and refine their initial target lists for Pb & SO₂.
- CREC Develop Work-sharing Options by January 30th
- Second quarter FY16, participating Regions initiate investigations